

REMARKS

Upon entry of the present amendment, claims 1-9 and 11 will remain pending in the above-identified application and stand ready for further action on the merits.

The amendments made herein to the claims do not incorporate new matter into the application as originally filed. In this respect, claims 6, 9 and 11 are each being redrafted in the present reply, into an independent format, and claim 10 is cancelled. As such, no new matter is introduced into the present application by way of the current amendment.

Allowable Subject Matter

Applicants appreciate the Examiner's courtesy in indicating that claim 6 contains allowable subject matter and would be allowed if redrafted as an independent claim, including all limitations of the base claim and intervening claims. Based on the amendment made herein to claim 6, it is submitted to now be in condition for allowance,

Claim Objections

Claim 9 has been objected to under the provisions of 37 CFR § 1.75(c). Reconsideration and withdraw of this objection is respectfully requested based on the amendment made herein to claim 9, wherein claim 9 is now written in an independent format.

Claim Rejections – 35 USC § 112 & 101

Claim 10 has been rejected under the provisions of 35 USC § 112, second paragraph, and has also been rejected under the provisions of 35 USC § 101. Reconsideration and withdraw of each of these rejections are respectfully requested based on the cancellation of claim 10 in the instant reply.

Claim Rejections – 35 USC § 103(a)

Claims 1-5, 7 and 9-10 have been rejected under the provisions of 35 USC § 103(a) as being obvious over JP 04-362653. Claims 8 and 11 have also been rejected under the provisions of 35 USC § 103(a) as being obvious over JP 04-362653, further in view of Organic Photoreceptors for Imaging Systems, to Borsenberger, pp. 289-296. Reconsideration and withdraw of each of these rejections is respectfully requested based on the following considerations.

The instant invention is directed to an organic electrophotographic photo-receptor having a conductive substrate and a photosensitive layer laid on the conductive substance, wherein the photosensitive layer contains the specific μ -oxo bridged heterometal compounds represented by the formula I to IV, as recited in instant claims 1 to 4, 6, 9 and 11. In the present invention, the most distinctive feature is present in that the center metals of μ -oxo bridged phthalo/naphthalocyanine compounds are different as stated in the pending claims, such that M1 represents a metal atom which is able to have a valence of up to three, M2 represents a metal atom which is able to have a valence of up to three, M2 represents a metal atom which is able to have a valence of four or five.

The JP 04-362653 reference (hereinafter called “JP reference”) discloses a photoconductive layer which contains a photoconductor of the formula shown in the JP reference. However, the JP reference neither suggests nor teaches that the specific charge generating compound has a different metal (or heterometal) in the tetraazaporphyrin ring, as mentioned by the Examiner in the Office Action (see page 4, lines 3-4). Instead, the JP reference suggests that it contains the same metal atom in the tetraazaporphyrin ring. In the JP reference, the formula is written as shown in the English abstract or page 2, top chemical formula, in which the metal atom is shown as M and common in both tetraazaporphyrin rings. In addition, the JP reference is silent on such a metal combination as instantly claimed.

The difference in metal atom as stated in the instant claims provides the organic photo-receptor with excellent technical effects as a charge generating material, such as high stability, excellent durability on both sensitivity and electrical potential, excellent electric properties and photosensitivity, as explained in paragraph [0070] of the present specification. These effects are also proven by a comparison of Examples with Comparative Examples. Comparative Example 1 shows PcGa-O-GaPc in which the center metals are Ga in common and Comparative Example 2 shows PcAl-O-AlPc in which the center metals are also common with Al. Comparative Example 3 shows PcGa-O-AlPc in which the center metals are different with Ga and Al. The Ga and Al are both a metal with a valence of up to three. These three compounds show poor properties in charged potential ($V_{m_{max}}$), photosensitivity for half decay exposure ($E_{1/2}$), residual potential (V_{re}) and dark decay ratio (DDR) as shown in Table 2. However, the μ -oxo bridged heterometal compounds of the present invention show excellent properties as shown in Table 1.

As is apparent from the above facts, these technical effects are superb and are unexpected from the cited disclosure of the JP reference.

Regarding the rejection against claims 8 and 11 based upon the cited JP reference and the cited Borsenberger reference, claim 8 depends from claims 1 to 4 and claim 11 recites formulas I-IV (from claims 1-4), such that it follows that claims 8 and 11 are also patentable, because of their dependence on (or recitation of formulas) found in allowable claims 1-4.

CONCLUSION

Based on the amendments and remarks presented herein, the Examiner is respectfully requested to issue a notice of allowance in the instant case, clearly indicating that each of pending claims 1-9 and 11 are allowed and patentable under the provisions of title 35 of the United States Code.

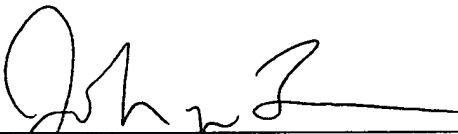
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John W. Bailey (Reg. No. 32,881) at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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